

AMENDMENTS TO THE CLAIMS

Claims 1 to 40 (Cancelled)

41. (New) A method of identifying breast cancer cells that are either resistant or sensitive to a protein tyrosine kinase inhibitor comprising the step of determining the expression profile of a gene expression product from at least one informative gene, wherein said at least one informative gene is Unigene Cluster No. Hs.171596 (EphA2), and wherein increased expression of said gene expression product in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor, while decreased expression of said gene expression product in said sample is indicative of resistance to a protein tyrosine kinase inhibitor.

42. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is Unigene Cluster No. Hs.74034 (caveolin-1), and wherein increased expression of said gene expression product in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor, while decreased expression of said gene expression product in said sample is indicative of resistance to a protein tyrosine kinase inhibitor.

43. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is Unigene Cluster No. Hs.139851 (caveolin-2), and wherein increased expression of said gene expression product in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor, while decreased expression of said gene expression product in said sample is indicative of resistance to a protein tyrosine kinase inhibitor.

44. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is selected from the group consisting of: Unigene Cluster No. Hs.349283; Hs.91143; Hs.155530; Hs.154299; Hs.445708; Hs.78183; and Hs.29759; and wherein increased expression of the gene expression product of either Hs.349283 or Hs.445708 in said sample is indicative of resistance to a protein tyrosine kinase inhibitor, whereas

increased expression of the gene expression product of either Hs.91143; Hs.155530; Hs.154299, Hs.78183, or Hs.29759 in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor.

45. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is selected from the group consisting of: Unigene Cluster No. Hs.125124; Hs.44077; Hs.154299; Hs.78183; Hs.155530; Hs.91143; Hs.22744; Hs.93005; Hs.4774; Hs.349283; Hs.26630; Hs.279583; Hs.445708; Hs.159643; and Hs.97837; and wherein increased expression of the gene expression product of either Hs.4774, Hs.349283, Hs.26630, Hs.279583, Hs.445708, Hs.159643, or Hs.97837 in said sample is indicative of resistance to a protein tyrosine kinase inhibitor, whereas increased expression of the gene expression product of either Hs.125124, Hs.44077, Hs.154299, Hs.78183, Hs.155530, Hs.91143, Hs.22744, or Hs.93005 in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor.

46. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is selected from the group consisting of: Unigene Cluster No. Hs.171596; Hs.74034; Hs.139851; Hs.78225; Hs.154299; Hs.62192; Hs.78183; Hs.155530; Hs.91143; Hs.87497; Hs.167741; Hs.157439; Hs.260024; Hs.289092; Hs.288555; Hs.75794; Hs.10706; Hs.183765; Hs.30299; Hs.316752; Hs.61638; Hs.1869; Hs.29759; Hs.70983; Hs.21851; Hs.155691; Hs.413945; Hs.204354; Hs.84700; Hs.178137; Hs.350470; Hs.349283; Hs.5338; Hs.445708; Hs.13222; Hs.279916; Hs.184276; Hs.278581; Hs.143842; Hs.129368; and wherein increased expression of the gene expression product of either Hs.21851; Hs.155691; Hs.413945; Hs.204354; Hs.84700; Hs.178137; Hs.350470; Hs.349283; Hs.5338; Hs.445708; Hs.13222; Hs.279916; Hs.184276; Hs.278581; Hs.143842; or Hs.129368 in said sample is indicative of resistance to a protein tyrosine kinase inhibitor, whereas increased expression of the gene expression product of either Hs.171596; Hs.74034; Hs.139851; Hs.78225; Hs.154299; Hs.62192; Hs.78183; Hs.155530; Hs.91143; Hs.87497; Hs.167741; Hs.157439; Hs.260024; Hs.289092; Hs.288555; Hs.75794; Hs.10706; Hs.183765; Hs.30299; Hs.316752; Hs.61638; Hs.1869; Hs.29759; or Hs.70983 in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor.

47. (New) The method according to Claim 41 further comprising the step of further determining a gene expression profile from a gene expression product of at least one additional informative gene, wherein said at least one additional informative gene is selected from the group consisting of: Unigene Cluster No. Hs.171596; Hs.125124; Hs.74034; Hs.139851; Hs.78225; Hs.406239; Hs.44077; Hs.154299; Hs.62192; Hs.432974; Hs.133015; Hs.180062; Hs.381081; Hs.74621; Hs.78183; Hs.55565; Hs.155530; Hs.91143; Hs.87497; Hs.167741; Hs.359682; Hs.157439; Hs.260024; Hs.169836; Hs.289092; Hs.22580; Hs.177534; Hs.288555; Hs.75794; Hs.10706; Hs.319825; Hs.184161; Hs.34073; Hs.75431; Hs.58169; Hs.406100; Hs.333418; Hs.7527; Hs.159572; Hs.183765; Hs.169610; Hs.331666; Hs.177596; Hs.8107; Hs.374534; Hs.173374; Hs.22744; Hs.30299; Hs.32309; Hs.101150; Hs.432855; Hs.316752; Hs.170328; Hs.61638; Hs.112472; Hs.1869; Hs.29759; Hs.43080; Hs.70983; Hs.301175; Hs.153260; Hs.93005; Hs.181874; Hs.82028; Hs.288261; Hs.159651; Hs.4890; Hs.75873; Hs.4774; Hs.279916; Hs.438672; Hs.21851; Hs.155691; Hs.52763; Hs.109315; Hs.413945; Hs.204354; Hs.84700; Hs.31130; Hs.178137; Hs.350470; Hs.349283; Hs.5344; Hs.26630; Hs.10237; Hs.374441; Hs.5338; Hs.9857; Hs.259785; Hs.180616; Hs.11085; Hs.279583; Hs.25640; Hs.355264; Hs.5599; Hs.445708; Hs.32112; Hs.13222; Hs.184627; Hs.159643; Hs.11067; Hs.387400; Hs.97837; Hs.279916; Hs.13479; Hs.182476; Hs.433326; Hs.25351; Hs.167927; Hs.372924; Hs.82432; Hs.184276; Hs.11912; Hs.193143; Hs.270404; Hs.167531; Hs.101174; Hs.44268; Hs.348724; Hs.79414; Hs.109752; Hs.403937; Hs.20281; Hs.78457; Hs.82921; Hs.18272; Hs.379091; Hs.30246; Hs.26102; Hs.445020; Hs.442762; Hs.278581; Hs.143842; Hs.29191; Hs.129368; Hs.22065; and Hs.287436; and wherein increased expression of the gene expression product of either Hs.4774; Hs.279916; Hs.438672; Hs.21851; Hs.155691; Hs.52763; Hs.109315; Hs.413945; Hs.204354; Hs.84700; Hs.31130; Hs.178137; Hs.350470; Hs.349283; Hs.5344; Hs.26630; Hs.10237; Hs.374441; Hs.5338; Hs.9857; Hs.259785; Hs.180616; Hs.11085; Hs.279583; Hs.25640; Hs.355264; Hs.5599; Hs.445708; Hs.32112; Hs.13222; Hs.184627; Hs.159643; Hs.11067; Hs.387400; Hs.97837; Hs.279916; Hs.13479; Hs.182476; Hs.433326; Hs.25351; Hs.167927; Hs.372924; Hs.82432; Hs.184276; Hs.11912; Hs.193143; Hs.270404; Hs.167531; Hs.101174; Hs.44268; Hs.348724; Hs.79414; Hs.109752; Hs.403937; Hs.20281; Hs.78457; Hs.82921; Hs.18272; Hs.379091; Hs.30246; Hs.26102; Hs.445020; Hs.442762; Hs.278581; Hs.143842; Hs.29191; Hs.129368; Hs.22065; or Hs.287436 in said sample is indicative of resistance to a protein tyrosine kinase inhibitor, whereas increased expression of the gene expression product of either Hs.171596; Hs.125124; Hs.74034; Hs.139851; Hs.78225; Hs.406239; Hs.44077; Hs.154299;

Hs.62192; Hs.432974Hs.133015; Hs.180062; Hs.381081; Hs.74621; Hs.78183; Hs.55565; Hs.155530; Hs.91143; Hs.87497; Hs.167741; Hs.359682; Hs.157439; Hs.260024; Hs.169836; Hs.289092; Hs.22580; Hs.177534; Hs.288555; Hs.75794; Hs.10706; Hs.319825; Hs.184161; Hs.34073; Hs.75431; Hs.58169; Hs.406100; Hs.333418; Hs.7527; Hs.159572; Hs.183765; Hs.169610; Hs.331666; Hs.177596; Hs.8107; Hs.374534; Hs.173374; Hs.22744; Hs.30299; Hs.32309; Hs.101150; Hs.432855; Hs.316752; Hs.170328; Hs.61638; Hs.112472; Hs.1869; Hs.29759; Hs.43080; Hs.70983; Hs.301175; Hs.153260; Hs.93005; Hs.181874; Hs.82028; Hs.288261; Hs.159651; Hs.4890; or Hs.75873 in said sample is indicative of sensitivity to a protein tyrosine kinase inhibitor.

48. (New) A method of identifying breast cancer cells that are either resistant or sensitive to a protein tyrosine kinase inhibitor comprising the steps of (a) determining the expression profile of gene expression products from seven informative genes comprising Unigene Cluster Nos. Hs.349283, Hs.91143, Hs.155530, Hs.154299, Hs.445708, Hs.78183, and Hs.29759; (b) subjecting the data obtained from step (a) to statistical analysis to assess whether said breast cancer cells are resistant or sensitive to a protein tyrosine kinase inhibitor.

49. (New) A method of identifying breast cancer cells that are either resistant or sensitive to a protein tyrosine kinase inhibitor comprising the steps of (a) determining the expression profile of gene expression products from fifteen informative genes comprising Unigene Cluster Nos. Hs.125124; Hs.44077; Hs.154299; Hs.78183; Hs.155530; Hs.91143; Hs.22744; Hs.93005; Hs.4774; Hs.349283; Hs.26630; Hs.279583; Hs.445708; Hs.159643; and Hs.97837; (b) subjecting the data obtained from step (a) to statistical analysis to assess whether said breast cancer cells are resistant or sensitive to a protein tyrosine kinase inhibitor.

50. (New) A method of identifying breast cancer cells that are either resistant or sensitive to a protein tyrosine kinase inhibitor comprising the steps of (a) determining the expression profile of gene expression products from forty informative genes comprising Unigene Cluster Nos. Hs.171596, Hs.74034, Hs.139851, Hs.78225, Hs.154299, Hs.62192, Hs.78183, Hs.155530, Hs.91143, Hs.87497, Hs.167741, Hs.157439, Hs.260024, Hs.289092, Hs.288555, Hs.75794, Hs.10706, Hs.183765, Hs.30299, Hs.316752, Hs.61638, Hs.1869, Hs.29759, Hs.70983, Hs.21851, Hs.155691, Hs.413945, Hs.204354, Hs.84700, Hs.178137, Hs.350470, Hs.349283, Hs.5338, Hs.445708,

Hs.13222, Hs.279916, Hs.184276, Hs.278581, Hs.143842, and Hs.129368; and (b) subjecting the data obtained from step (a) to statistical analysis to assess whether said breast cancer cells are resistant or sensitive to a protein tyrosine kinase inhibitor.

51. (New) A method of identifying breast cancer cells that are either resistant or sensitive to a protein tyrosine kinase inhibitor comprising the steps of (a) determining the expression profile of gene expression products from one hundred and thirty seven informative genes comprising Unigene Cluster Nos. Hs.171596, Hs.125124, Hs.74034, Hs.139851, Hs.78225, Hs.406239, Hs.44077, Hs.154299, Hs.62192, Hs.432974, Hs.133015, Hs.180062, Hs.381081, Hs.74621, Hs.78183, Hs.55565, Hs.155530, Hs.91143, Hs.87497, Hs.167741, Hs.359682, Hs.157439, Hs.260024, Hs.169836, Hs.289092, Hs.22580, Hs.177534, Hs.288555, Hs.75794, Hs.10706, Hs.319825, Hs.184161, Hs.34073, Hs.75431, Hs.58169, Hs.406100, Hs.333418, Hs.7527, Hs.159572, Hs.183765, Hs.169610, Hs.331666, Hs.177596, Hs.8107, Hs.374534, Hs.173374, Hs.22744, Hs.30299, Hs.32309, Hs.101150, Hs.432855, Hs.316752, Hs.170328, Hs.61638, Hs.112472, Hs.1869, Hs.29759, Hs.43080, Hs.70983, Hs.301175, Hs.153260, Hs.93005, Hs.181874, Hs.82028, Hs.288261, Hs.159651, Hs.4890, Hs.75873, Hs.4774, Hs.279916, Hs.438672, Hs.21851, Hs.155691, Hs.52763, Hs.109315, Hs.413945, Hs.204354, Hs.84700, Hs.31130, Hs.178137, Hs.350470, Hs.349283, Hs.5344, Hs.26630, Hs.10237, Hs.374441, Hs.5338, Hs.9857, Hs.259785, Hs.180616, Hs.11085, Hs.279583, Hs.25640, Hs.355264, Hs.5599, Hs.445708, Hs.32112, Hs.13222, Hs.184627, Hs.159643, Hs.11067, Hs.387400, Hs.97837, Hs.279916, Hs.13479, Hs.182476, Hs.433326, Hs.25351, Hs.167927, Hs.372924, Hs.82432, Hs.184276, Hs.11912, Hs.193143, Hs.270404, Hs.167531, Hs.101174, Hs.44268, Hs.348724, Hs.79414, Hs.109752, Hs.403937, Hs.20281, Hs.78457, Hs.82921, Hs.18272, Hs.379091, Hs.30246, Hs.26102, Hs.445020, Hs.442762, Hs.278581, Hs.143842, Hs.29191, Hs.129368, Hs.22065, and Hs.287436; and (b) subjecting the data obtained from step (a) to statistical analysis to assess whether said breast cancer cells are resistant or sensitive to a protein tyrosine kinase inhibitor.

52. (New) The method according to any one of Claims 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, and 51, wherein the protein tyrosine kinase inhibitor is BMS-A.